

Application Serial No: 10/790,339  
Attorney Docket No.: 51910-CIP (ACT-115-CIP, R&H 04-02CIP)

### **REMARKS**

Entry of the foregoing, re-examination and reconsideration of the subject matter identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.112, and in light of the remarks which follow are respectfully requested.

Claims 1-20 are pending in the application and are under consideration.

The allowance of claims 1-10 is noted with appreciation.

By the amendments, a drawing replacement sheet has been submitted by which a new figure (Fig. 10b) has been added and Figure 10 has been relabeled as "Fig. 10a". Support can be found at least in original Figure 10 and paragraphs 23 and 41 of the specification. The specification has been revised consistent with the drawing amendments. In addition, claims 11, 13, 14, 16 and 20 have been amended to recite that the released microstructure is electrically deflectable with respect to the substrate. Claim 20 has further been revised by replacing "cantilever" with "microstructure".

#### **1. Drawing Objection**

Turning now to the Official Action, the drawings were objected to for the reasons set forth in section 3 of the Official Action. While applicants submit that Figure 10 as originally presented is illustrative of the features of claim 12, Figure 10b has been added for purposes of further illustration. Accordingly, withdrawal of this objection is respectfully requested.

#### **2. §112 Rejection**

Claim 12 was rejected under 35 U.S.C. §112, second paragraph, as being indefinite. This rejection is respectfully traversed for the following reasons.

Paragraphs 23 and 41 of the subject application as originally presented read as follows:

[0023] FIG. 10 shows an embodiment of the present invention where the dielectric layer is enclosed with conductive polysilicon . . .

[0041] . . . FIG. 10 shows a cross sectional view of a cantilever completely enclosed by polysilicon.

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With reference to original Figure 10, it can be seen that the conductive layer 52 is both disposed between the substrate and the dielectric layer 50 and contacts and covers the dielectric layer. That the conductive layer is "disposed between" the substrate and dielectric layer is not inconsistent with it also contacting and covering the dielectric layer. Accordingly, withdrawal of this rejection is in order.

**3. Art Rejections**

**a. §102/§103 Rejections Based on Jerominek**

Claims 11, 13, 14, 16 and 17 were rejected under 35 U.S.C. §102(e) as being anticipated by Jerominek (U.S. Patent No. 6,201,243); claims 11 and 13-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Jerominek (and Busta et al, discussed below); and claims 15 and 18 were rejected under 35 U.S.C. §102(c) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Jerominek. These rejections are respectfully traversed for the following reasons.

Jerominek relates to various types of micro sensors for environmental sensing including radiation, temperature, flow, and chemical sensors. With reference to FIGS. 2, 3 and 22, Jerominek discloses a microbridge structure which includes a substrate layer 1 provided with two electrical contacts 2, a microstructure 22 including a sensing layer 13 that forms a sensing area provided with two electrical contacts 50, and a micro support 23 for suspending the microstructure 22 over and at a predetermined distance from the substrate layer 1.

Jerominek does not disclose or suggest each feature of the present invention. For example, Jerominek does not disclose or fairly suggest a micromachined apparatus which includes a released microstructure which is electrically deflectable with respect to the substrate, as recited in claim 11, 13, 14, 16 and 20 as amended above. The microbridge structures disclosed by Jerominek appear to be fixed with respect to the substrate without mechanical deflection during operation. Regarding the dielectric layers, Jerominek discloses that:

The dielectric layers 6, 9, 12 and 16 provide good thermal isolation to the microstructure 22 due to a relatively low thermal conductivity of the dielectric materials. These dielectric layers 6, 9, 12 and 16 can be optimized to provide

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a solid support for the microstructure 22 and to isolate the microstructure thermally. (Col. 5, lines 43-46).

There is no disclosure in Jerominek that the disclosed microbridge structures are electrically deflectable with respect to the substrate, or that they can or should be so made.

For the foregoing reasons, withdrawal of the §102 and §103 rejections based on Jerominek is respectfully requested.

**b. §103(a) Rejection Based on Jerominek in view of Busta et al**

Claims 19 and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Jerominek in view of Busta et al. This rejection is respectfully traversed for the following reasons.

The deficiencies in Jerominek are discussed above with respect to the independent claims. Busta et al is relied upon for that document's purported disclosure of the use of silicon carbide. Even if Jerominek and Busta et al would have been combined in the manner suggested in the Official Action, the present invention would not result. In this regard, the use of silicon carbide in the Jerominek microbridge structures would not cure the above-described deficiencies in Jerominek. More specifically, the structure resulting from Jerominek and Busta et al as combined in the Official Action would not include a released microstructure which is electrically deflectable with respect to the substrate.

Accordingly, withdrawal of the §103 rejection based on Jerominek in view of Busta et al is respectfully requested.

**c. §103(a) Rejection Based on Busta et al**

Claims 11 and 13-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Busta et al (and Jerominek, discussed above). This rejection is completely improper for at least the following reasons.

A proper rejection under 35 U.S.C. 103(a) requires that the Examiner establish a *prima facie* case of obviousness. *In re Geiger*, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987). MPEP 2143 sets forth the three basic requirements of a *prima facie* case of obviousness as follows:

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First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

Here, the Office has clearly failed to establish a *prima facie* case of obviousness.

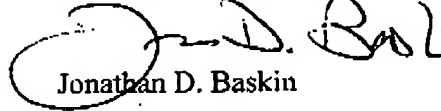
Of the rejected claims, claims 11, 13, 14, 16 and 20 are independent. In setting forth this rejection, the Office has failed to address every feature of these claims, and has therefore not established a *prima facie* case. For example: claims 11 and 20 recite that the conductive layer is disposed between the substrate and the dielectric layer; claim 13 recites that the conductive layer is enclosed within the dielectric layer; claim 14 recites first and second conductive layers attached to the dielectric layer, and wherein the dielectric layer is sandwiched between the conductive layers; and claim 16 recites a dielectric layer comprising a via hole. The Office has not properly addressed these claim features. In this respect, the only purported difference between the cited document and present invention referenced in the rejection relates to film thickness - other clear deficiencies have not properly been addressed. Accordingly, withdrawal of the §103(a) rejection based on Busta et al is respectfully requested.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited.

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If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at his earliest convenience.

Respectfully submitted,



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